

## Bispirocyclo derivative and its application in electroluminescent material

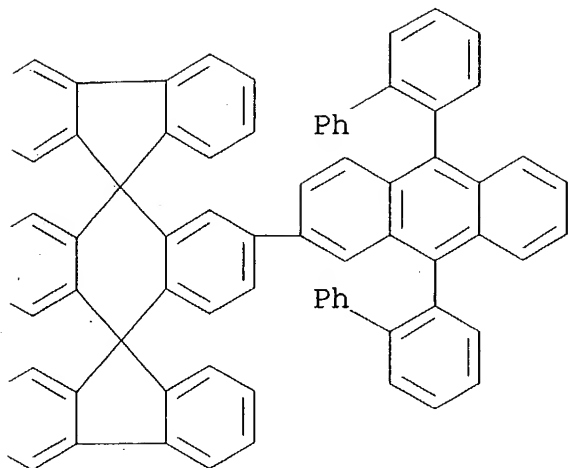
**Patent number:** CN1338499  
**Publication date:** 2002-03-06  
**Inventor:** LI BIN (CN); QIU YONG (CN); WANG FEI (CN)  
**Applicant:** UNIV QINGHUA (CN)  
**Classification:**  
- international: C09K11/06; C07D519/00  
- european:  
**Application number:** CN20010130676 20010820  
**Priority number(s):** CN20010130676 20010820

### Abstract of CN1338499

A bispirocyclo derivative used as electroluminescent material individually or as luminous additive is disclosed, which has also current carrier transmission power. Its advantages include stronger fluorescence and high thermal and optical stability.

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T 474687-62-2P 474687-82-6P 474687-99-5P

474688-06-7P 474688-07-8P

(prepn. of electron transporting material for org.  
electroluminescent display)

12 ANSWER 3 OF 4 ZCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:74514 ZCAPLUS

DOCUMENT NUMBER: 138:97990

TITLE: Bispirocyclic ring derivatives and organic  
electroluminescent devices using them

INVENTOR(S): Li, Bin; Qiu, Yong; Wang, Fei

PATENT ASSIGNEE(S): Qinghua Univ., Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 77  
pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

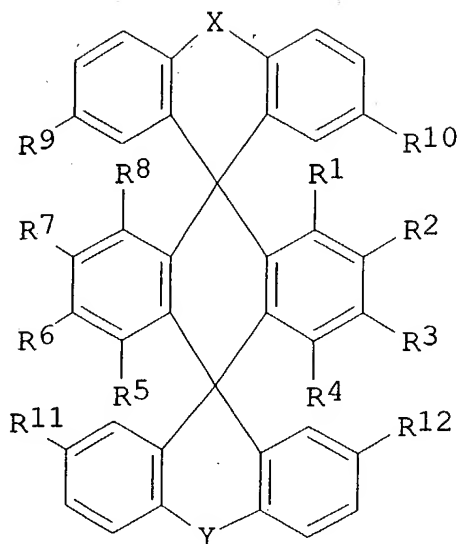
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
✓ CN 1338499	A	20020306	CN 2001-130676	200108 20
			CN 2001-130676	200108 20

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 138:97990

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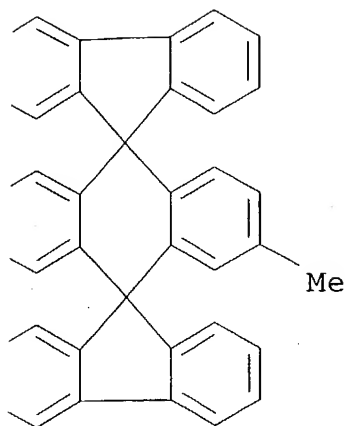
AB The invention relates to an org. electroluminescent device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 bispirocyclo ring derivs. I [R1-12 = H, or C1-24 or other atoms-contg. moiety; such as (iso)alkyl, OH, alkoxy, NO, CN, amino, S, halo, arom., (un)substituted heterocyclyl; X, Y = bond, O, S, NR, R-C-R (R = H or C1-24 or other atoms-contg. moiety)]. The Markush structures were claimed. The electroluminescent device was manufd. by vacuum vapor deposition of the synthetic electroluminescent material on In<sub>2</sub>O<sub>3</sub>-SnO<sub>2</sub> film (as anode)-deposited glass sheet and then vacuum vapor deposition of Mg/Ag (10:1) layer (as cathode) on.

IT 484687-26-5 484687-27-6 484687-28-7  
 484687-29-8 484687-30-1 484687-31-2  
 484687-32-3 484687-33-4 484687-34-5  
 484687-35-6 484687-36-7

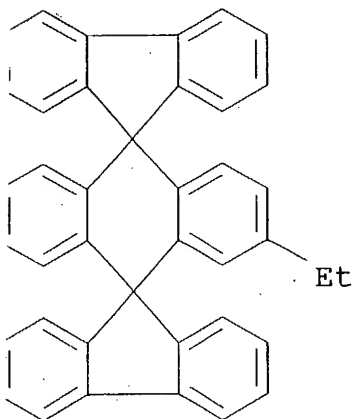
(novel bispirocyclo deriv. for org. electroluminescent devices)

RN 484687-26-5 ZCAPLUS

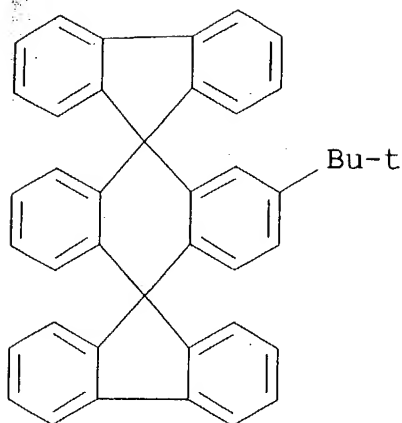
CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
 2'-methyl- (9CI) (CA INDEX NAME)



N 484687-27-6 ZCAPLUS  
N Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2'-ethyl- (9CI) (CA INDEX NAME)

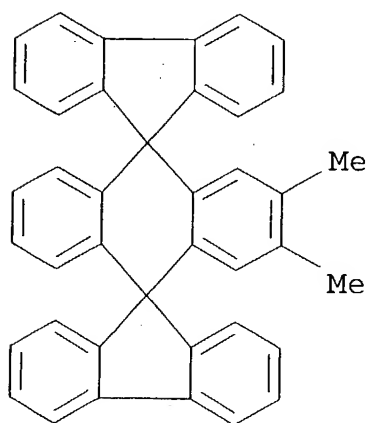


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CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2'-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



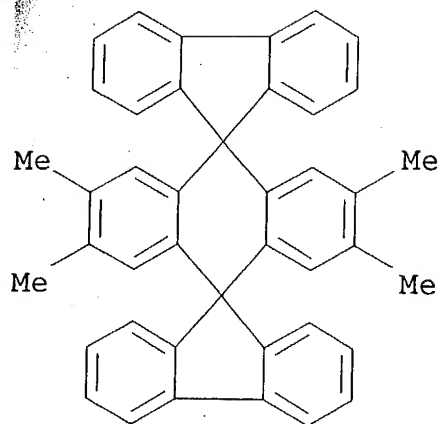
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CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2',3'-dimethyl- (9CI) (CA INDEX NAME)



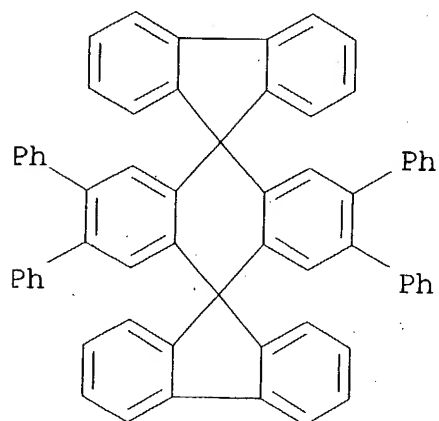
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CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2',3',6',7'-tetramethyl- (9CI) (CA INDEX NAME)



RN 484687-31-2 ZCAPLUS

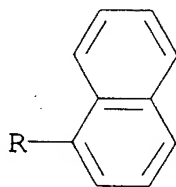
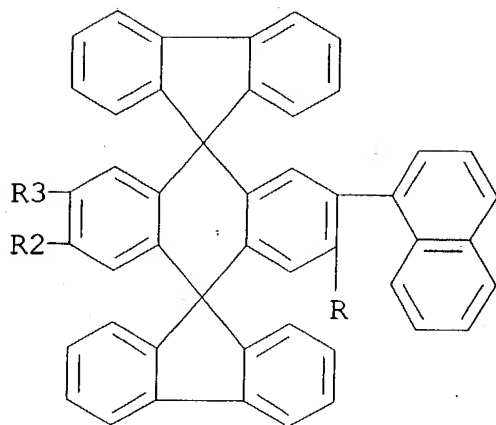
CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2',3',6',7'-tetraphenyl- (9CI) (CA INDEX NAME)



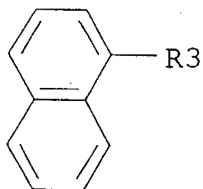
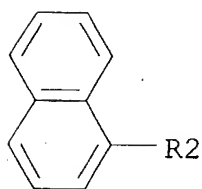
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CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2',3',6',7'-tetra-1-naphthalenyl- (9CI) (CA INDEX NAME)

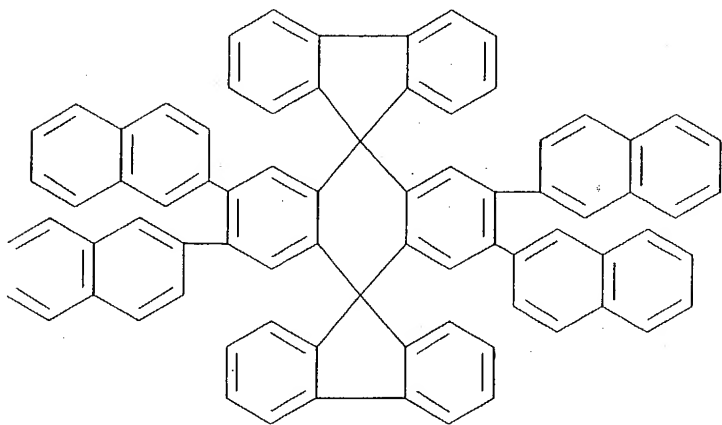
PAGE 1-A



PAGE 2-A



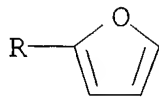
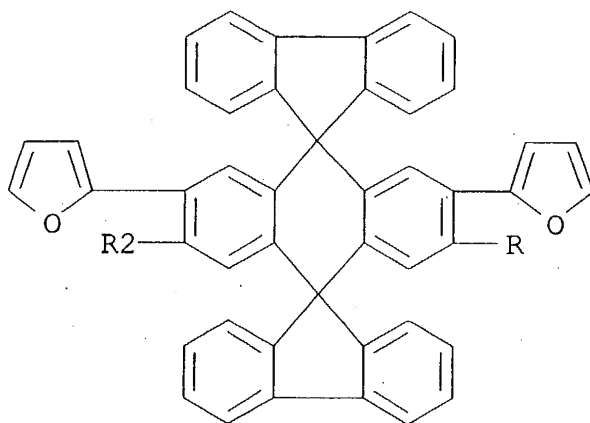
CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
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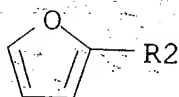
CN Furan, 2,2',2'',2'''-dispiro[9H-fluorene-9,9'(10'H)-anthracene-  
10',9''-[9H]fluorene]-2',3',6',7'-tetrayltetrakis- (9CI) (CA INDEX  
NAME)

PAGE 1-A



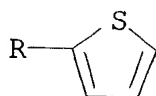
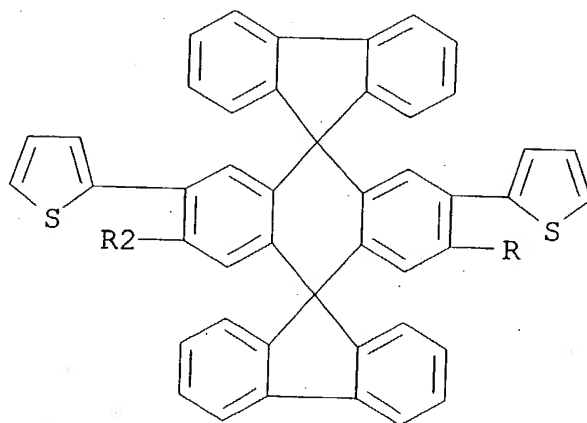


PAGE 2-A

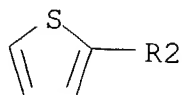


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N Thiophene, 2,2',2'',2'''-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene]-2',3',6',7'-tetrayltetrakis- (9CI) (CA INDEX NAME)

PAGE 1-A

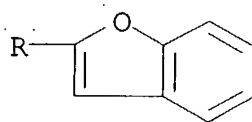
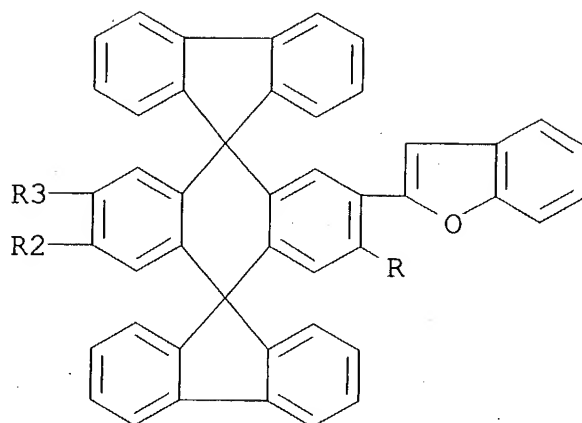


PAGE 2-A

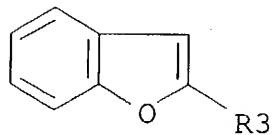
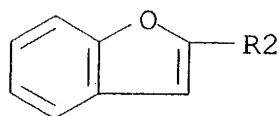


484687-36-7 ZCAPLUS  
Benzofuran, 2,2',2'',2'''-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene]-2',3',6',7'-tetrayltetrakis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 484687-26-5 484687-27-6 484687-28-7  
484687-29-8 484687-30-1 484687-31-2  
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